

Nuclear Data for Homeland Security: Comments by DHS

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DHS Comments

Dear Pavel,

I am sorry to have to inform you that despite our best efforts, the appropriate representatives from the Radiological and Nuclear Countermeasures Portfolio of DHS S&T will not be able to speak on Thursday morning. Mike Burns had previously requested that one of the Rad/Nuc Portfolio members speak in his place since the portfolio is responsible for establishing the requirements and plans for the programs to be executed.

Having said that, we have reviewed the presentation entitled "Nuclear Data for Homeland Security" that you and Mark Chadwick wrote. We were quite satisfied with what you put together and have only a few additional comments.

DHS Comments ctn'd

1. Active interrogation includes significant work in neutron interrogation as well as photon interrogation. We would like to see more discussion of missing cross section data and secondary reaction modeling for neutron induced fission.
2. For both neutron and photon interrogation methods, we need good cross section data over the relevant energy range ($\sim 14\text{MeV}$ to thermal) for materials in typical cargo loads. These are materials that are typically not found in nuclear weapons (traditional emphasis) like wood, ice, water, etc.

DHS Comments ctn'd

3. These same cross sections are imperative for understanding the reactions and absorption of neutron emitted from fission or (gamma,n) reactions.
4. In general, one of the primary goals of our program is to thoroughly understand signal versus background for both active and passive detection techniques. This understanding and, ultimately the resulting predictions, can only be achieved through accurate modeling and precision data input.

I encourage you to continue interacting with us at every opportunity.

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